

What is claimed is:

1. A liquid crystal device comprising:

plural data lines;

plural scanning lines intersecting the data lines;

pixels connected to said data lines and said scanning lines; and

a driver section which supplies to each of said plural data lines an image signal for which the polarity is inverted into a positive polarity potential or a negative polarity potential, for each unit period, and which supplies for each one horizontal period plural pulse signals which each rise at a different timing, to each of said plural scanning lines while skipping one part of said plural scanning lines;

wherein driving by said driver section is performed such that in any one horizontal period, plural scanning lines to which is supplied a pulse signal rising at a timing corresponding to an application period of a positive polarity potential among said image signals are adjacent to each other, and plural scanning lines to which is supplied a pulse signal rising at a timing corresponding to an application period of a negative polarity potential among said image signals are adjacent to each other.

2. The liquid crystal device according to claim 1, wherein in one vertical period, an application time of a positive

polarity potential and an application time of a negative polarity potential of the image signal supplied to each data line are substantially equal.

3. The liquid crystal device according to claim 1, wherein in one vertical period, two pixel groups corresponding to two adjacent scanning lines are in a condition where a potential of the same polarity is written for a time of not less than 50% of the one vertical period.

4. The liquid crystal device according to claim 1, wherein the unit period in which the polarity of said image signal is inverted corresponds to one horizontal period.

5. The liquid crystal device according to claim 4, wherein when the number of said plural scanning lines is $2m$ lines, said driver section supplies a pulse signal rising at a timing corresponding to the application period of said positive polarity potential to a predetermined scanning line, and then supplies a pulse signal rising at a timing corresponding to the application period of said negative polarity potential to a scanning line separated by m lines from said predetermined scanning line, and thereafter repeats the aforementioned operation, to thereby write a potential of the same polarity to pixel groups corresponding to adjacent scanning lines for each two horizontal periods.

6. The liquid crystal device according to claim 4, wherein when the number of said plural scanning lines is $4m$ lines, said driver section supplies a pulse signal rising at a timing corresponding to the application period of said positive polarity potential to a predetermined scanning line, supplies a pulse signal rising at a timing corresponding to the application period of said negative polarity potential to a scanning line separated by m lines from said predetermined scanning line, supplies a pulse signal rising at a timing corresponding to the application period of said positive polarity potential to a scanning line separated by $2m$ lines from said predetermined scanning line, and supplies a pulse signal rising at a timing corresponding to the application period of said negative polarity potential to a scanning line separated by $3m$ lines from said predetermined scanning line, and thereafter repeats the aforementioned operation, to thereby write a potential of the same polarity to pixel groups corresponding to adjacent scanning lines for each four horizontal periods.

7. The liquid crystal device according to either one of claim 5 and claim 6, wherein a frame memory which temporarily stores image data and then reads out the image data for writing to a pixel in accordance with a scanning sequence of said scanning lines, is provided in said driver section.

8. A liquid crystal device comprising plural pixels provided in an array inside an image display area, and a driver section which matrix-drives said pixels, wherein

said driver section divides one field data into plural consecutive field data, and alternately writes in each one horizontal period while shifting a write commencing time within one vertical period, and inverts the write polarity of the data between consecutive fields.

9. The liquid crystal device according to claim 8, wherein a memory is provided in said driver section, and

said driver section, when writing one field data as consecutive first and second two field data, writes an image signal input from the outside as is as a first field data, while doing this stores this image signal in said memory to create a second field data which is delayed with respect to said image signal, alternately writes said first and second field data for each one horizontal period, and at the same time, inverts the polarity of the second field data with respect to the first field data.

10. A liquid crystal device comprising plural data lines, plural scanning lines intersecting the data lines, plural pixels provided in an array inside an image display area, by corresponding to intersections of respective data lines and

scanning lines, and a driver section which matrix-drives said pixels, wherein

said driver section comprises a data driver which supplies an image signal for which the polarity is inverted into a positive polarity potential or a negative polarity potential for each one horizontal period, to each of said plural data lines, and a scanning driver which sequentially shifts a gate-output pulse in synchrony with a clock signal which rises for each one horizontal period, and

said scanning driver outputs n gate-output pulses at a different timing within one vertical period in a picture signal, alternately shifts each of said gate-output pulses in synchrony with said clock signals, and also allocates to respective scanning lines, either one of alternately rising m enable signals, to thereby control the output of the scanning signals to respective scanning lines.

11. The liquid crystal device according to claim 10, wherein in said scanning driver, two gate-output pulses are simultaneously output to positions which are shifted by the position corresponding to $1/2$ of a vertical period in the picture signal, and either one of first and second two alternately rising enable signals is allocated, to respective scanning lines at the shifted positions, and

when the image display area is divided into first and second two display areas from an upper stage side along a

scanning line array direction, respective enable signals are allocated to plural scanning lines arranged in either one of respective display areas, and

said scanning signal is alternately output to said first and second display areas by corresponding to the rising positions of the respective enable signals.

12. The liquid crystal device according to claim 10, wherein in said scanning line driver, at the same time, four gate-output pulses are sequentially output to positions which are shifted by the position corresponding to $1/4$ of a vertical period in the picture signal, and any one of first through fourth four alternately rising enable signals is allocated to respective scanning lines at the shifted position,

when the image display area is divided into first through fourth four display areas from an upper stage side along a scanning line array direction, respective enable signals are allocated to plural scanning lines arranged in any one of display areas, and

said scanning signal is alternately output to said first through fourth display areas corresponding to the rising positions of the respective enable signals.

13. The liquid crystal device according to claim 10, wherein in said scanning driver, two gate-output pulses are output at the same time to positions which are shifted by the position

corresponding to $1/2$ of a vertical period in the picture signal, and either one of first and second two alternately rising enable signals is allocated to respective scanning lines, and

said first and second enable signals are allocated to the scanning lines arranged at odd numbers and even numbers of lines from the uppermost part of the image display area, respectively, and

when the image display area is divided into first and second two display areas from an upper stage side along a scanning line array direction, said scanning signal is alternately output to said first and second display areas by corresponding to the rising positions of the respective enable signals.

14. The liquid crystal device according to claim 10, wherein a memory is provided in said driver section,

while an image signal input from the outside is being supplied to said data driver, the image signal is also stored in said memory, and

said data driver alternately supplies in each of the one horizontal periods, an image signal input from the outside, and image data read out from said memory, and also inverts the polarity of the image data read out from said memory with respect to said image signal, to thereby supply an image signal for which the polarity is inverted into the positive

polarity potential or the negative polarity potential for each one horizontal period, to each of said plural data lines.

15. A drive method for a liquid crystal device which comprises plural data lines, plural scanning lines intersecting the data lines, and pixels connected to said data lines and said scanning lines, comprising the steps of: supplying to each of said plural data lines an image signal for which the polarity is inverted into a positive polarity potential or a negative polarity potential, for each unit period, and at the same time, supplying for each one horizontal period plural pulse signals which each rise at a different timing, to each of said plural scanning lines while skipping one part of said plural scanning lines; and driving such that in any one horizontal period, plural scanning lines to which is supplied a pulse signal rising at a timing corresponding to an application period of a positive polarity potential among said image signals are adjacent to each other, and plural scanning lines to which is supplied a pulse signal rising at a timing corresponding to an application period of a negative polarity potential among said image signals are adjacent to each other.

16. The drive method for a liquid crystal device according to claim 15, wherein in one vertical period, an application time of a positive polarity potential and an application time

of a negative polarity potential of the image signal supplied to each data line are substantially equal.

17. The drive method for a liquid crystal device according to claim 15, wherein in one vertical period, a potential of the same polarity is written for a time of not less than 50% of the one vertical period, to two pixel groups corresponding to two adjacent scanning lines.

18. The drive method for a liquid crystal device according to claim 15, wherein the unit period in which the polarity of said image signal is inverted, is made one horizontal period.

19. The drive method for a liquid crystal device according to claim 18, comprising the steps of: supplying a pulse signal rising at a timing corresponding to the application period of said positive polarity potential to a predetermined scanning line, when the number of said plural scanning lines is $2m$ lines, subsequently supplying a pulse signal rising at a timing corresponding to the application period of said negative polarity potential to a scanning line separated by m lines from said predetermined scanning line, and thereafter repeating the aforementioned operation, to thereby write a potential of the same polarity to pixel groups corresponding to adjacent scanning lines for each two horizontal periods.

20. The drive method for a liquid crystal device according to claim 18, comprising the steps of: supplying a pulse signal rising at a timing corresponding to the application period of said positive polarity potential to a predetermined scanning line, when the number of said plural scanning lines is $4m$ lines, supplying a pulse signal rising at a timing corresponding to the application period of said negative polarity potential to a scanning line separated by m lines from said predetermined scanning line, supplying a pulse signal rising at a timing corresponding to the application period of said positive polarity potential to a scanning line separated by $2m$ lines from said predetermined scanning line, and supplying a pulse signal rising at a timing corresponding to the application period of said negative polarity potential to a scanning line separated by $3m$ lines from said predetermined scanning line, and thereafter repeating the aforementioned operation, to thereby write a potential of the same polarity to pixel groups corresponding to adjacent scanning lines for each four horizontal periods.

21. The drive method for a liquid crystal device according to claim 15, wherein skip scanning of said scanning line is performed at a frequency of not less than 100 Hz.

22. A drive method for a liquid crystal device in which plural pixels are arranged in matrix form inside an image

display area, comprising the steps of:

dividing one field data into plural consecutive field data, at the same time, alternately writing the field data in each one horizontal period while shifting a write commencing time within one vertical period in a picture signal, and inverting the write polarity of the data between consecutive fields.

23. A drive method for a liquid crystal device which comprises plural pixels arranged in matrix form in an image display area, and a memory, comprising the steps of:

writing an image signal input from the outside as is, as predetermined field data, when one field data is written as consecutive first and second two field data, while doing this storing this image signal in said memory to create a second field data which is delayed with respect to said image signal, alternately writing said first and second field data for each one horizontal period, and at the same time, inverting the polarity of the second field data with respect to the first field data.

24. A projection type display apparatus comprising an illumination device, a light modulation device which modulates light emerged from said illumination device, and a projection device which projects light modulated by said light modulation device, wherein the liquid crystal device according to any one

of claim 1 through claim 14 is provided as said light modulation device.